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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,772	02/22/2002	Janet K. Yamamoto	UF-267XC1	1105
23557 7590 . 03/26/2007 SALIWANCHIK LLOYD & SALIWANCHIK			EXAM	IINER
A PROFESSION	IAL ASSOCIATION		PARKIN, JEFFREY S ART UNIT PAPER	EFFREY S
PO BOX 142950 GAINESVILLE,	950 LE, FL 32614-2950			PAPER NUMBER
			1648	
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SHORTENED STATUTORY	PERIOD OF RESPONSE	MAIL DATE	DELIVER	Y MODE
3 MON	THS	03/26/2007	PAI	PER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice to Comply

Application No. Applicant(s) Yamamoto, J. K., et al. 10/080,772 Examiner **Art Unit** Paper No. 03/19/2007 Jeffrey S. Parkin 1648

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING **NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES**

Applicant must file the items indicated below within the time period set the Office action to which the Notice is attached to avoid abandonment under 35 U.S.C. § 133 (extensions of time may be obtained under the provisions of 37 CFR 1.136(a)).

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):
1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998).
2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."
5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
7. Other: applicants are reminded that Sequences appearing in the specification and/or drawings (e.g., see Figures 2, 4, and 10) must be identified by a sequence identifier (SEQ ID NO.:) in accordance with 37 C.F.R. § 1.821(d). Sequence identifiers for sequences appearing in the drawings may appear in the Brief Description of the Drawings. Applicant must provide appropriate amendments to the specification and/or drawings inserting the required sequence identifiers. Extensive amendments may necessitate the submission of a substitute specification. If the requisite SEQ ID NOS.: are not present in the sequence listing, a substitute sequence listing will be required.
Applicant May Need to Provide: ☑ An substitute computer readable form (CRF) copy of the "Sequence Listing".
An substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).
For questions regarding compliance to these requirements, please contact:

- For Rules Interpretation, call (571) 272-0951
- For Patentin Software Program Help, call Patent EBC at 1-866-217-9197 between the hours of 6 a.m. and 12 midnight, Monday through Friday, EST.
- Send e-mail correspondence for Patentin Software Program Help @ ebc@uspto.gov.

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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
10/080,772	02/22/2002	Yamamoto, J. K., et al.	UF-267XC1

EXAMINER	
Jeffrey S. Parkin, Ph.D	
ART UNIT	PAPER NUMBER
1648	03/19/2007

DATE MAILED:

Please find below a communication from the EXAMINER in charge of this application Commissioner of Patents

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 C.F.R. § 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 C.F.R. § 1.821-1.825 for the reason(s) set forth below or on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. questions regarding compliance with the sequence rules requirements specifically should be directed to the departments listed at the bottom of the Notice to Comply. Applicants are reminded that sequences appearing in the specification and/or drawings (e.g., see Figures 2, 4, and 10) must be identified by a sequence identifier (SEQ ID NO.:) in accordance with 37 C.F.R. § 1.821(d). Sequence identifiers for sequences appearing in the drawings may appear in the Brief Description of the Drawings. Applicant must provide appropriate amendments to the specification and/or drawings inserting the required sequence identifiers. Extensive amendments may necessitate the submission of a substitute specification. If the requisite SEQ ID NOS .: are not present in the sequence listing, a substitute sequence listing will be required.

Applicant is given ONE MONTH, or THIRTY DAYS, whichever is longer, from the mailing date of this letter within which to comply with the sequence

Serial No.: 10/080,772 Applicants: Haynes, B. F., et al.

rules, 37 C.F.R. § 1.821-1.825. Failure to comply with these requirements will result in ABANDONMENT of the application under 37 C.F.R. § 1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 C.F.R. § 1.136(a). In no case may an applicant extend the period for reply beyond the SIX MONTH statutory period. Direct the reply to the undersigned. Applicant is requested to return a copy of the attached Notice to Comply with the reply.

Correspondence

Any inquiry concerning this communication should be directed to Jeffrey S. Parkin, Ph.D., whose telephone number is (571) 272-0908. The examiner can normally be reached Monday through Thursday from 10:30 AM to 9:00 PM. A message may be left on the examiner's voice mail service. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Bruce R. Campell, Ph.D., can be reached at (571) 272-0974. Direct general status inquiries to the Technology Center 1600 receptionist at (571) 272-1600. Informal communications may be submitted to the Examiner's RightFAX account at (571) 273-0908.

Applicants are reminded that the United States Patent and Trademark Office (Office) requires most patent related correspondence to be: a) faxed to the Central FAX number (571-273-8300) (updated as of July 15, 2005), b) hand carried or delivered to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), c) mailed to the mailing address set forth in 37 C.F.R. § 1.1 (e.g., P.O. Box 1450, Alexandria, VA 22313-1450), or d) transmitted to the Office using the Office's Electronic Filing System. This notice replaces all prior Office notices specifying a specific fax number or hand carry address for certain patent related correspondence. For further information refer to the Updated Notice of Centralized Delivery and Facsimile Transmission Policy for Patent Related Correspondence, and Exceptions Thereto, 1292 Off. Gaz. Pat. Office 186 (March 29, 2005).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Please direct all replies to the United States Patent and Trademark Office via one of the following: 1) Electronically submitted through EFS-Bio (http://www.uspto.gov/ebc/efs/downloads/documents.htm, EFS Submission User Manual - ePAVE); 2) Mailed to: Mail Stop Sequence, Commissioner for Patents, P.O. Box 22313-1450, Alexandria, VA 22313-1450; and 3) Hand Carry, Federal Express, United Parcel Service or other delivery service to: U.S. Patent and

Serial No.: 10/080,772 Applicants: Haynes, B. F., et al.

Trademark Office, Mail Stop Sequence, Customer Window, Randolph Building, 401 Dulaney Street, Alexandria, VA 22314.

Respectfully,

Jeffrey S. Parkin, Ph.D. Primary Examiner

Art Unit 1648

19 March, 2007

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PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATOGGAATAGGATTAACTCAAGAACAACAACCCGAGCCCAGATTTCCACCAGCTAGAATGCAGTGTAGAGCATCGTACGAACGA	
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATOGGAATAGGATTAACTCAAGAACAACAAGCGEAGCCCAGATTTOCACCAGCTAGAATGCAGTGTAGAAGCATGGTATCTTGAACCACTAGGAAAGTT 800 G-G-G-G-G-G-G-G-G-G-G-G-G-G-G-G-G-G-	
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATOGGAATAGGATTAACTCAAGAACAACAACCCGAGCCCAGATTTCCACCAGCTAGAATGCAGTGTAGAGCATCGTACGAACGA	
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATOGGATTANCTCAAGAACAACCAGCCCAGATTTCCACCAGCTAGAATCCAGTGTAGAGCATGCAACTACGAAACTT 800	D
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATOGGANTAGGATTAACTCAAGAACAAGCCCAAGCCCAAGATTTCCACCAGCTAGAATCCAGTGTAGAGCATTGCAACCACTAGGAAAGTT 800	
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATOGGANTAGGATTAACTCAAGAACAAGCCCAAGCCCAAGATTTCCACCAGCTAGAATCCAGTGTAGAGCATTGCAACCACTAGGAAAGTT 800	
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATOGGAATAGGATTAACTCAAGAACAACAGCGCAGCCCAGATTTCCACCAGCTAGGAATGCAGTGTAAGCAATGCACTACGAAAGTT 800	
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATOGGAATAAGGATTAACTCAAGAACAACAAGGGCCCCAGATTTCCACCAGCTAGAATCCAGTGTAAGGCATGGTATCTTGAACCACTAGGAAAGTT 800	D
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATCGGAATAACTCAACAACAACAACAACCAGGTTTCCACCAGCTTGGAATCCAGTTTCTAACGCACTACGAAAGTT 800	
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATCGGAATAACTCAACAACAACAACAACCAGGTTTCCACCAGCTTGGAATCCAGTTTCTAACGCACTACGAAAGTT 800	D
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATOGGANTAGGATTANCTCANGANCANGAGGAGCCCAGGATTTOCACCAGCTAGANTGCAGTGTAGGCATTCTACANGCACTAGGANAGTT 800	
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATOGGAATAGGATTAACTCAAGAACAACAAGCGCAGCCCAGATTTCCACCAGCTAGAATGCAGTGTAGAGCATGCTATCTAAGCACTTAGAAAGTT 800	
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATGGGAATAGGATTAACTCAAGAACAACCAGGCCCCAGATTTCCACCAGCCTAGAATCCAGTGTAGAGCATCCTAGAAAGGTT 800	
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATOGGANTAGGATTAACTCAAGAACAACGAACCAGGTATTCCACCAGGTAATGCAGTGTAGAGCATGGTAATCTTCAACCACTAGGAAAGGT 800	
PC1 PM1	##5 ## ## ## ## ## ## ## ## ## ## ## ##	TTATOGGAATAGGATTAACTCAAGAACAACAAGCGCAGCCCAGATTTCCACCAGCTAGAATGCAGTGTAGAGCATGCTATCTAAGCACTTAGAAAGTT 800	

PC1concensus	BD1:GGCAGCCATAMAGACTAMATCTCCCCCGAGCAGTGCAATTGAAGCCAGGCAGCTAAACAGGCATTATTCCTCCATTTATAGATAG
PC1 #4	}CC
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	CAAGAGCAGAACACCTGAAGTAAAGCTGTATTTAAAACAATCTTTGAGCATAGCCAATGCTAACCCAGATTGTAAAAGGGCAATGAGTCATCTTAAAC 1000
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Clconcensus 1	001; CAGAGAGTACTTTAGAGGAAAAACTGAGAGCCTGTCAAGAGGTAGGATCACCAGGATATAAAATGCAGTTGTTAGCAGAACCTCTTACAAGGGTTUBGAC
	001; CAGAGAGTACTTTAGAGGAAAAACTGAGAGCCTGTCAAGAGGTAGGATCACCAGGATATAAAATGCAGTTGTTAGCAGAAGCTCTTACAAGGGTTCAGAC
PC1 #4	·
PC1 #4 #5	
PC1 #4 #5 #6	[
PC1 #4 #5 #6 #10	·
PC1 #4 #5 #6	[
PC1 #4 #5 #6 #10 #12	
PC1 #4 #5 #6 #10 #12 #13	
PC1 #4 #5 #6 #10 #12 #13 #14	
PC1 #4 #5 #6 #10 #12 #13 #14 #15	
PC1 #4 #5 #6 #10 #12 #13 #14	
PC1 #4 #5 #6 #10 #12 #13 #14 #15	
PC1 #4 #5 #6 #10 #12 #13 #14 #15	
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16	
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16	
PC1 #4 #5 #6 #10 #13 #13 #14 #15 #16 PH1 81 #3 #10	
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20	
PC1 #4 #5 #6 #10 #13 #13 #14 #15 #16 PH1 81 #3 #10	
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20	
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22	
PC1 #4 #5 #6 #10 #13 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24	
PC1 #4 #5 #6 #10 #112 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42	
PC1 #4 #5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24	
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PC1 #4 #5 #6 #10 #112 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42	AGTTCAAACAAGAGGATCTAGACCAACGTGTTTCAATTGTAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGCAAAGAGATGTAACAACTGTTGGA 1200
PC1 #4 #5 #6 #10 #112 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42	AGTTCANACANCAGGATCTAGACCRACGTGTTTCAATTGTAAAAAACCAGGCCACCTCGCCAAACAATGTAGAGAAGGATGTAACAACTGTOGA 1200
PC1 #4 #5 #6 #10 #112 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42	AGTTCANACAACAAGGATCTAGACCRACGTGTTTCAATTGTAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGAAGATGTAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #112 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42	AGTTCANACAMGAGGATCTAGACCRACGTGTTTCAATTGTAAANAACCAGGCCACCTGGCCAAACAATGTAGAGAAGCAAAGAGATGTAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #112 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42	AGTTCANACANGGATCTAGACCAACGTGTTTCAATTGTAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGAATGTAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCANACANCAGGATCTAGACCRACGTGTTTCAATTGTAAAANACCAGGCCACCTCGCCAAACAATGTAGAGAAGGATGTAACAACTGTCGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCANACANGGATCTAGACCRACGTGTTTCAATTGTAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGCAAAGAAGTAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #112 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #42	AGTTCANACANCAGGATCTAGACCRACGTGTTTCAATTGTAAAANACCAGGCCACCTCGCCAAACAATGTAGAGAAGGATGTAACAACTGTCGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCANACANGGATCTAGACCRACGTGTTTCAATTGTAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGCAAAGAAGTAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCANACAMCAGGATCTAGACCRACGTGYTTCANTTGTAAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGCAAAGAATGTAAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCANACAMCAGGATCTAGACCRACGTGYTTCANTTGTAAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGCAAAGAATGTAAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCABACAAGAGGATCTAGACCRACGTGTTTCABTTGZAABABACCAGGCCACCTGGCCABACABTGTAGAGBAGGAAAGAGATGTAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCANACAMCAGGATCTAGACCRACGTGYTTCANTTGTAAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGCAAAGAATGTAAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCABACAAGAGGATCTAGACCRACGTGTTTCABTTGZAABABACCAGGCCACCTGGCCABACABTGTAGAGBAGGAAAGAGATGTAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCABACAAGAGGATCTAGACCRACGTGTTTCABTTGZAABABACCAGGCCACCTGGCCABACABTGTAGAGBAGGAAAGAGATGTAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCABACAAGAGGATCTAGACCRACGTGTTTCABTTGZAABABACCAGGCCACCTGGCCABACABTGTAGAGBAGGAAAGAGATGTAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCANACANGAGGATCTACACCAACGTGTTTCANTTGTANANAACCAGGCCACCTGGCCAAACAATGTAGAGAAGGATGTAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCANACANGAGATCTAGACCAACGTGTTTCANTTGTANANACCAGGCCACCTGGCCAAACAATGTAGAGAAGCAAAGAGATGTAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCANACANGAGGATCTACACCAACGTGTTTCANTTGTANANAACCAGGCCACCTGGCCAAACAATGTAGAGAAGGATGTAACAACTGTGGA 1200
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCANACANGAGGATCTACACCTACGTGTTCANTTGTAAANAACCAGGCCACCTGGCCAAACAATGTACAGGAAGCAAACAATGTAACAACTGTAACAACTGTAGGA T T T T T
PC1 #4 #5 #6 #10 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41 #43	AGTTCANACANGAGGATCTACACCTACGTGTTCANTTGTAAANAACCAGGCCACCTGGCCAAACAATGTACAGGAAGCAAACAATGTAACAACTGTAACAACTGTAGGA T T T T T

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		AGCCCCGGTAAACCAAGTGCAGCAAATGGTGCCCATCTGCACCTCCAATGGAAGACAGGAAATTGTTAGATTTATAA
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FIG. 2D

PC1 concensus	1. MGHOQGRDWKTAVKRCSHVAVGVGSKSRKPGEGNPRWAIRMAMVTTGREPGDIPENLEQLRSIICDLHDEREQYGSSKEIDMAITTLKVPAVAGILMWTV	
PC1 #4		v
#5 -		-
#6 #10		-
#12		_
813		-
914		-
#15		-
9 16		-
PH1 #1	•	-
#3		_
#10		
#20		
#22		-
#24		•
#41	D	
#42		
#43	-0	•
	STAAAAEHM YAGNGLUTE PS LKESCEVETCEDDON VILOTEDES	
	STANAREMYAQMGLOTRPS I KESGGKESGPPQAYP I QTVMGA PQYVALDPIMVS I PMBKAREGLGGBEVQIMPTAPSANLTSTDMATL IMSAPGCAADK	20

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	201.BILDSTLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTQBQQASPRPAPARAQCRANYLBALGKLAAIKAKSPRAVQLKQGAKRDYSSPIDRLPAQID	,
PC1concensus PC1 #4 #5 86	201:BILDSTLKOMTASYDRTHPPDGPRPLPYPTAABIMGIGLTQEQQASPRPAPARMQCRANYLEALGKLAAIKAKSPRAVQLKQGAKEDYSSPIDELPAQID	,
#5	201.BILDETLKOMTABYDRTHPPDGPRPLPYFTAABIMGIGLTQEQQASPRPAPARMQCRAMYLEALGKLAAIKAKSPRAVQLKQGAKEDYSSPIDELPAQIDRP	•
#5 #6 #10 #12	201:BILDBTLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTQEQQASPRPAPARMQCRAWYLEALGKLAAIKAKSPRAVQLKQGAKEDYSSPIDRLPAQIDID	•
#5 #6 #10 #12 #13	201.BILDETLKONTABYDRTHPPDGPRPLPYPTAABINGIGLTQEQQASPRPAPARNQCRAWYLEALGKLAAIKAKSPRAWQLKQGAKEDYSSPIDRLPAQIDR.———————————————————————————————	•
#5 #6 #10 #12 #13 #14	201.BILDETLKONTABYDRTHPPDGPRPLPYPTAABINGIGLTQEQQASPRPAPARNQCRAWYLEALGKLAAIKAKSPRAWQLKQGAKEDYSSPIDRLPAQIDR.———————————————————————————————	•
#5 #6 #10 #12 #13 #14	201:BILDSTLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTOBOOASPRPAPARMOCRAMYLEALGKLAAIKAKSPRAVOLKQGAKEDYSSPIDRLPAQID	•
#5 #6 #10 #12 #13 #14	201.BILDETLKONTABYDRTHPPDGPRPLPYPTAABINGIGLTQEQQASPRPAPARNQCRAWYLEALGKLAAIKAKSPRAWQLKQGAKEDYSSPIDRLPAQIDR.———————————————————————————————	•
#5 #6 #10 #12 #13 #14	201.BILDETLKONTABYDRTHPPDGPRPLPYPTAABINGIGLTQEQQASPRPAPARNQCRANYLEALGKLAAIKAKSPRAVQLKQCAKEDYSSPIDRLPAQID	•
#5 #6 #10 #12 #13 #14 #15	201.BILDETLKONTABYDRTHPPDGPRPLPYPTAABINGIGLTQEQQASPRPAPARNQCRANYLEALGKLAAIKAKSPRAVQLKQCAKEDYSSPIDPLPAQID	•
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3	201.BILDSTLKQMTASYDRTHPPDGPRPLPYPTAABIMGIGLTQEQQASPRPAPARMQCRAMYLEALGKLAAIKAKSPRAVQLKQGAKEDYSSPIDELPAQID	,
#5 #6 #10 #12 #13 #14 #15 #16 PM1 #1 #10 #20	201.BILDSTLKOMTASYDRTHPPDGPRPLPYPTAABIMGIGLTQEQQASPRPAPARMQCRAMYLEALGKLAAIKAKSPRAVQLKQGAKEDYSSPIDELPAQID I - D	
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22	201. EILDETLKOMTAEYDRTHPPDGPRPLPYFTAABIMGIGLTGEQQASPRPAPAPHQCRAMYLEALGKLAAIKAKSPRAVQLKQGAKRDYSSPIDRLPAQID . ID	,
#5 #6 #10 #12 #13 #14 #15 #16 #10 #10 #10 #10 #10 #10 #10 #10 #10 #10	201. BILDSTLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTGEQQASPRPAPARMQCRAMYLEALGKLAAIKAKSPRAVQLKQGAKRDYSSPIDRLPAQID . I - D - R - P R - P R - P	•
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22	201.BILDETLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTQEQQASPRPAPAPHQCRAMYLEALGKLAAIKAKSPRAVQLKQGAKEDYSSPIDELPAQID	•
#5 #6 #10 #12 #13 #14 #15 #16 PM1 #1 #10 #20 #20 #24 #41	201. BILDSTLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTGEQQASPRPAPARMQCRAMYLEALGKLAAIKAKSPRAVQLKQGAKRDYSSPIDRLPAQID . I - D - R - P - R	,
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41	201. BILDSTLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTGEQQASPRPAPARMQCRAMYLEALGKLAAIKAKSPRAVQLKQCAKRDYSSPIDRLPAQID . I - D - R - P - R	
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41	201.BILDETLKONTABYDRTHPPDGPRPLPYPTAABINGIGLTQEQQASPRPAPARNQCRANYLEALGKLAAIKAKSPRAVQLKQCAKBDYSSPIDPLPAQID	
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41	201.BILDETLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTGEQQASPRPAPARMQCRAMYLEALGKLAAIKAKSPRAVQLKQCAKRDYSSPIDRLPAQID . I - D - R - P - R - R	400
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41	201.BILDETLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTQEQQAEPRPAPARMQCRAMYLEALGKLAAIKAKSPRAVQLKQGAKEDYSSPIDELPAQID	400
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41	201. BILDETLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTGEQQASPRPAPAPHQCRAMYLEALGKLAAIKAKSPRAVQLKQGAKRDYSSPIDRLPAQID . I - D - R - P - R - R	400
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41	201. BILDSTLKQMTABYDRTHPPDGPRPLPYPTAABIMGIGLTQEQQASPRPAPARMQCRAMYLEALGKLAAIKAKSPRAVQLKQGAKRDYSSPIDRLPAQID . I - D - R - P - R - R	400
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #10 #20 #22 #24 #41 #43	201.BILDETLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTQEQQAEPRPAPARMQCRAMYLEALGKLAAIKAKSPRAVQLKQGAKEDYSSPIDELPAQID I - D	400
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #3 #10 #20 #22 #24 #41	201. EILDETLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTGEQQASPRPAPAPAQCRAMYLEALGKLAAIKAKSPRAVQLKQGAKRDYSSPIDRLPAQID . I - D	400
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #10 #20 #22 #24 #41 #43	201. BILDETLKOMTABYDRTHPPDGCPRPLPYFTAABIMGIGLTQEQQASPRPAPABMQCRAWYLEALGKLAA IKAKSPRAVQLKQGAKEDYSSFIDRLPAQID	400
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #10 #20 #22 #24 #41 #43	201:BILDSTLKOMTASYDRTHOPDGPRPLFYFTAABIMGIGLTQEQQASPRFAPARHQCRANYLEALGKLAAIKAKSPRAVQLKQGAKEDYSSFIDRLFAQID	400
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #10 #20 #22 #24 #41 #43	201. RILDSTLKOMTABYDRTHPPDGPRPLPYPTAAEIMGIGLTQEQQASPRPAPARMQCBANYLEALCKLAAIKAKSPRAVQLKQGAKEDYSSPIDRLPAQID	400
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #10 #20 #22 #24 #41 #43	201.BILDETLKOMTABYDRTHPPDGPRPLPYPTAABIMGIGLTQEQQASPRPAPARHQCBAMYLEALGKLAAIKAKSPRAVQLKQGAKEDYSSPIDRLPAQID I - D	400
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#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #10 #20 #22 #24 #41 #43	201, BILDSTLKOMTASYDRTHPPDGPRPLPYPTAABINGIGLTQEQQASPRPAPARMQCBANYLEALGKLAAIKAKSPRAVQLKQGAKEDYSSFÜDRLPAQID	400
#5 #6 #10 #12 #13 #14 #15 #16 PH1 #1 #10 #20 #22 #24 #41 #43	201. BILDSTLKOMTASYDRTHPPDGGRPLPYPTAABINGIGLTOSQOASPRPAPARAQCBANYLEALGKLAAIKAKSPRAVQLKQGAKEDYSSFIDRLPAQID	400

Clconcensus	401: KPGHLAANCNQRGKKTPGNGKMGPAAAPVNQVQQMVPSAPPNEDRELLDL 450
PC1 #4	;
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₽6	400: 449
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#12	***************************************
#13	
#14	
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#16	
PH1 #1	
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#22	***************************************
#24	
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FIG. 2F

PH1 PC1 PSTALUMA UK8 PPR SEMDAI-1 BARGSTON ACMORI-1 ACMORI-2 SEMDAI-2 THE	1;ATCGCGAATGGACAGGGCCGAGACGACGCCGTTAAGAGATGTAGTAATGTTCCTGTAGGGGTAAGAGTAAGAAAGTTTGGAGAAGGAA
PUKUOKA	
	. ACTITIAGGT00GCCATANGGATGGCTAATGTAACTACAGGACGAGAACTGGTSATATACCAGAGAATTTAGAACAGTTAAGATCGATTATTTTGTGATTT 200
•	-TCATAT
	-TCÀTACG-T-GCA
	•
	A
	-TAT-GACGTT
PH1 PC1	201: ACATGGCAGAAGAGAACAATATGGATCTAGTAAAGAATTGGTATATGGCAATTACCACTTTAAAAGTTTTTGCAGTAGCTGGAATTTTAAATATGACTGTG
PETALUMA	A
UKB	
PPR	
SENDAI-1	T-TACAA
BANGSTON ACHORI-1	A
AOHORI-2	GTT
SENDAI - 2	·A
TH2	A
YOKOHAMA SHIZUOKA	G-ACA
PERSUORA '	G-AAGGAT
	TCTACTGCCGCAGCAGCACACATGTATGCTCAGATGGGATTAGATACCAGACCATCTATAAAAGAAGGAGGGGGGGAAAAGAAGAAGAAGAACACCACACGG 400
	TT
	TT
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-	AA-TCAA
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i.	TA-TCA-TTTT
	TG-A

FIG. 4A

PHI	401:CTTATCCTATTCAAACAGTAAATGEAGCACCACAGTATGTAGCCCTTGACCCAAAAATGGTGTCCATCTTTATGGAAAAAGGCAGGAGGGGCTCTAGGAGG
PC1	T
PETALABIA	-A
UXB	AT-T-CGAT
PPR	-A
SENDA I - 1	-A
BANGSTON	-A
AOMORI-1	T
ACMORT-2	
SENDAI-2	
	T
1343	
YOKORAMA	т
SHI ZUOKA	-ACCA
PURUORA	-A
	TGAGGAGGTCCAACTGTGGTTCACCACCCTTTCCCCTAATTTAACTTCAACTGATATGGCTACATTAATTA
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	AA-TT-A
	•

PH1	601:GAGATCTTAGATGAAACACTGAAACAGATGACAGCTGAGTATGATCGTACTCATCCTCCTGATGGGCCTAGACCCCTGCCCTATTTCACCCCTGGCGGGA
PC1	
PETALUMA	
UKB	"AAGG-AAAAAA
PPR	AAU
SENDAI - 1	AA
BANGSTON	
ACMORT-1	ATU
ACHORI-2	AC
SEMDAI-2	-GARCGG
TH2	AC
YOROHAMA .	AAC
SH I ZUOKA	A
PURUCEA	AT

TTATGGGAATAGGATTAACTCAA	GAACAACABGCGGAGCCCAGATTTGCACCAGCTAGAATGCAGTG	TAGAGCATGGTATCTTGAAGCACTAGGAAAGTT 80
T		
T		A
C		AC-
G		T
G		T
Gi		
	A-A-TA	



FIG. 4B

	TGTGA-GA
•	
	A-CG-A-CA
ı	
	GG
ì	GC
ì	
•	G
	G
	CGTTGAAG-TOGCGCGC
•	
	CANGAGCAGAACACAGCTGAAGTAAAGCTGTATTTAAAACAATCTTTGAGCATAGCCAATGCTAACCCAGATTGTAAAAGGCCAATGAGTCATCTTAAA
	CANGNGCAGANCACAGCTGANGTAAAGCTGTATTTAAAACAATCTTTGAGCATAGCCAATGCTAAACCCAGATTGTAAAAGCCCAATGAGTCATCTTAAA
	CG
	CANGAGCAGAACACAGCTGAAGTAAAGCTGTATTTAAAACAATCTTTGAGCATAGCCAATGCTAACCCAGATTGTAAAAGGGCAATGAGTCATCTTAAAC
	CANGAGCAGAACACAGCTGAAGTAAAGCTGTATTTAAAACAATCTTTGAGCATAGCCAATGCTAACCCAGATTGTAAAAGGGCAATGAGTCATCTTAAAG
	CANGAGCAGAACACAGCTGAAGTAAAGCTGTATTTAAAACAATCTTTGAGCATAGCCCAATGCTAACCCAGATTGTAAAACGAATGAGTCATCTTAAAAC
	CANGRICAGANCACAGCTGANGTANAGCTGTATTTANAACAATCTTTGAGCATAGCCCAATGCTANCCCAGATTGTANAACGCCAATGAGTCATCTTANAC
	CANGAGCAGAACACAGCTGANGTAAAGCTGTATTTAAAACAATCTTTGAGCATAGCCAATGCTAACCCAGATTGTAAAACGGCAATGAGTCATCTTAAAC
	CANGAGCAGAACACAGCTGAAGTAAAGCTGTATTTAAAACAATCTTTGAGCATAGCCCAGTTGTAAAACGAGTGATAAAGGGCAATGAGTCATCTTAAAAC
	CANGAGCAGAACACAGCTGANGTAAAGCTGTATTTAAAACAATCTTTGAGCATAGCCAATGCTAACCCAGATTGTAAAACGGCAATGAGTCATCTTAAAC

	AAC-CAGTTAAC
	AT-CCAGTAA
	ACCAGTT
	ACCAGTT
	AAC-CCAGTTAAC-C
	A
	A
	A
	A
	A
	ACCAGTGTCAATGAC-TGAAA
•	ACCAGGTGCAA
	ACTTCAAACAACAGGATCTAGACCAACGGGTTTCAATTGTAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGCAAAGAGATGTAACAACTGTGGGTAAGGTTMT-AT-AT-AT-AT-T-A
	AGTTCAAACAAGAGATCTAGACCAACGIGFTTCAATTGTAAAAAACCAGGCCACCTGGCCAAACAATGTAGAGAAGCAAAGAGATGTAACAACTGTGG

\cdot
1201: AAACCTGGTCACTTAGCTGCTAATTGCTGGCAAAGAGGTAAAAAACCCCGGGAAACGGGAAGATGGGGCCAGCTGCAGCCCCGGTAAACCAAGTGCAGC
TGAGAAGG-ATTTG
-GGCGAAAA
G
:
\cdot
A
GGATGA-C-GTG-TT
ANATOGT *** GCCATCTGCACCTCCAATGGAAGACAGGAAATTGTTAGATTTATAA 1353
GCAAAT
-GCCAAAT
CAAATGA-AATTGATTTA-A-A
GCAAATATAGG-AACTGATTTA-A-
A***A
GCA***TG

FIG. 4D

Pet gag TGCTGCAG	TCTGCAGCTGAAAATATGTATTCTCAAATGGGATTAGA-AC-AG-CCATCTAGAGG-GGAAA-GG 385 TGCTGCAGCTGAAAATATGTATTCTCAAATGGGATTAGACACTAGGCCATCTATGAAAGAAGAGGGGGAAAAGAGG 385	
JSY3 gag O IGCIGCAGC	lgaaaacatgtatactcagatgggattagacaccaggccatctacaagagaagcaggggaaaagagg Tgaaaatatgtacactcagatgggattagacactagaccatctatgagagaagcaggagaaaaaaaa	
UK8 gag Shizuoka	igaaaatatgtatgctcagatgggattagacactagaccatctacaaaggaagctggaggaaaaaggaagg	
Aomori 1 TM2 gag	CACAGCAGCTGAAATATGTATGCTCAGATGGGATTAGACACCAGACCATCTATAAAAGAAAG	
RT Forward		
RT Reverse		
FC1 GAG	CGCAGCAGCTGAACACATGTATGCTCAGATGGGATTAGATACCAGACCATATATAACATACAAAAAAAA	
A9=4		
B4=5	0	
4 9 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		
Pet dad	Pet dag AAGGC-COTCACAGGCATATATATATATATATATATATATATATATAT	
Bang		
JSY3 gag 0		
UK8 gag	UK8 gag AAGGC-CCTCCACAGGCATATCCTATTCAAACAGTAAATGGAGCACCACAATATGTAGCTCTTGACCCAAAAATGGT 461	
Snizuoka Pomori		
TM2 gag	TM2 dag AAGGA-CCTCCACAGGCTTATCCTATTCAACAGTAAATGGAGCACCACAGTATGTAGCCCCTTGATCCAAAAATGGT 209	
RT Forward	AGC-CCTCCACAGGCATCTC	
RT Probe		
KT Reverse FC1 GAG		
A9=4	-TAGCCCTCCACATATCCTATTCAAACAGTAAATGGAGTACATATGTAGCCCTTGACCCAAAAATGGT 4	
B4=5	AGC-CCTCCACAGGCATATCCTATTCAAACAGTAAATGGAGTACCACAATATGTAGGGCTTGACCCAAAAATGGT 75	

FIG. 10A

	3	FIG. 10B	
	76	71-41-52-67-5-4-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-	A9=4
	615	G ATTTAACTICAACTGATATGGCTACATTAATTATGTCTGCGCCTGGCTGTGCAGCAGATAAAGAGATTTTAGATGAA	FC1 GAG
	21		RT Reverse
	31		RT Probe
	13		RT Forward
	615	g ATTTAACATCAACTGATATGGCTACATTAATTATGTCCGCACCTGGCTGTGCAGCAGATAAAGAAATCCTAGATGAA	TM2 gag
	363		Aomori 1
	363		Shizuoka
	615	g ATTTAACACCTACTGACATGGCCACATTAATAATGGCCGCACCAGGGTGCGCTGCAGATAAAGAAATATTGGATGAA	UK8 gag
	615	O ATTTAACACCTACTGACATGGCCACATTAATAATGGCCGCACCAGGGTGCGCTGCAGATAAAGAAATATTGGATGAA	JSY3 gag O
	619	Bang AITTAACACCTACTGACATGGCCACATTAATAATGGCCGCACCAGGGTGCGCTGCAGATAAAGAAATATTGGANGAA	Banç
	615	g ATTTAACACCTACTGACATGGCCACATTAATAATGGCCGCACCAGGGTGCGCTGCAGATAAAGAAATATTGGATGAA	Pet gag
	919	Consensus AT-TAACC-ACTGA-ATGGC-ACATTAAT-ATG-C-GC-CC-GG-TG-GC-GCAG-TAA-GA-ATT-GA-GAA	Consensus
	• 08	5 GTCCAA	B4=5
	16	A9a4 G	A9=4
	538	FC1 GAG GTCCATTTTATGGAAAAGCAAGAGGGGCTAGGAGGTGAGGAGGTCCAACTGTGGTTCACAGCCTTTTCTGCTA	FC1 GAG
	21	RT Reverse GTCCA	RT Reverse
	31	**************************************	RT Probe
	19		RT Forward -
	538	TM2 gag GTCCATITITATGGAGAAGGCAAGAGGGGCTAGGAGGTGAGGAGGTCCAACTGTGGTTCACAGCTTTTCAGCTA	TM2 gag
	286	TATGGAGAAGGCAAGAGGGGCCTAGGAGGTGAGGAGGTCCAACTGTGGTTCACAGCCTTTTCAGCTA	Aomori 1
	286	GICCATITITATGGAAAAAGCAAGAAGGATTAGGAGGAGGAGGAGGTCCAACTATGGTTTACTGCATTTTCAGCTA	Shizuoka
	538	CATGGAAAAGGCAAGAAGGGTTAGGAGGTGAAGAAGTTCAACTATGGTTCACAGCCTTCTCTGCAA	UK8 gag
:	238	JSY3 gag o grccatititatggaaaaggcaagagaaggattaggaggtgaggaagttcagctatggtttactgccttctctgcaa	JSY3 gag 0
	538	IATGGAAA AGGCAAGAGGAGGTGAGGAGGTGAAGTTCAATTATGGTTTACTGCCTTCTGCAA	Bang
	538		Pet gag
	გ წე.		Consensus